carrying out these recommendations they suggested that the 700*l.* should be expended as follows:—"Chemist's salary, 300*l.*; agricultural inspector's salary, 150*l.*," &c.

The report must render it plain to anyone who has had experience in experimental work of the kind contemplated that this part of the recommendation is based on imperfect knowledge. What evidence is there in the history of the Society, or elsewhere, which goes to show that the best man to initiate and conduct investigations on all subjects relating to agriculture should be a professional chemist? Such a man should have a good general knowledge of all the sciences relating to agriculture. He should be well known as a man of broad views and great grasp of mind. He should, moreover, be thoroughly conversant with the details of modern agriculture. He should have given evidence of being imbued with an ardent desire to elicit truth, as well as of his taste and fitness for conducting experiments. We submit that a really good chemist, possessing all these qualifications, can seldom be found. If he exists in Scotland, let him by all means be made director of the proposed station or stations; not, however, because he is a chemist, but because he is the best man. There are many chemists who would doubtless be glad to accept such an appointment, and who would be as unfit for it as for the direction of the Channel fleet. It seems incredible that any body of thoughtful men would propose to trust the initiation and direction of experiments on crops and animals to a man who would not necessarily know anything of the habits of either.

A most peculiar part of the report of the committee to which the Highland Society referred the consideration of this question is the remuneration (150*l.* a year) they propose for an agricultural inspector. If the views of the committee were acted on, the *bonâ fide* value of the experiments would depend on this officer. He should be an accomplished agriculturist. He should possess great intelligence, the highest personal character, and the most rigid love of truth, as well as the sternest sense of duty. He would be expected to initiate experiments from which results of national importance would flow. And this is the man for whom the munificent sum of 150*l.* a year is proposed! If a man like Mr. Lawes were to undertake the duty, he would accept no remuneration. In this case 150*l.* a year may be a fair sum to cover travelling and other expenses. But if a competent man is to be employed who cannot afford to work gratuitously, a salary equal to that of the average of intelligent professional men must be offered. This part of the Report has been already denounced in strong and emphatic language; and we understand it has been opposed by leading members of the Society who value science and appreciate the work to be done. The action of the committee has been openly exposed by Mr. David Milne Home, an ardent advocate of the application of science to agriculture, and by Mr. John Wilson, of Eddington Mains, a truly enlightened farmer. These gentlemen contend that the directing head or body should have the power to call in the professional aid of the best chemist or chemists, and such other experts as may be needed. This view is based on common sense. If they prevail in the councils of the Society, we may expect to see ere long in Scotland agricultural stations which in all human probability will give a new stimulus to agricultural progress. If they fail, and the work is entrusted to men who are not in every way equal to it, we may get an annual crop of worthless or misleading results, like those which have formed so large a portion of our agricultural literature.

While the Royal Agricultural Society of Scotland is discussing these matters, a local Agricultural Association formed in Aberdeenshire has actually fixed sites for five stations, at which experiments will be conducted for three years. The Marquis of Huntley is president of the Society, and Mr. Barclay M.P., is among the active members. A sum exceeding 1,000*l.* has been already subscribed. For the present the experiments will be confined to the determination of the best states in which to apply phosphates and nitrogen. Each plot is to be 1-112th part of an acre. It is to be regretted that potash and one or two other constituents of plants will not be tried. In some respects the scheme devised by the Association corresponds with that which I have carried out at Glasnevin for several years, and the results of which I have not, owing to pressure of other work, been able to publish. In the Glasnevin experimental ground the several crops are crossed by the manures; and thus we bring out the results in a striking way, and guard against inequalities in the soil. We also raised three consecutive grain crops without manure before commencing the experiments.

THOMAS BALDWIN

THE NEW GEOMETRY

Syllabus of Plane Geometry (corresponding to Euclid, Books i.-vi.) Prepared by the Association for the Improvement of Geometrical Teaching. (London: Macmillan, 1875.)

THE readers of NATURE are so well acquainted with the genesis and growth of the Association whose syllabus has recently been given to the public, that we are relieved from all necessity of explaining what objects it has in view. The main result of its five years of labour is this Syllabus, and we shall here briefly exhibit some of its chief features. It is a double syllabus, being a syllabus of geometrical constructions and a syllabus of plane geometry. The former is very brief, and contains such constructions as can be made with the ruler and compasses only. This subject of constructive geometry has been tried in many schools of late and has been found generally to answer the end in view. Boys thus obtain some idea of the objects of pure geometry and of what is involved in the postulates of the science. The more important syllabus is prefaced by a Logical Introduction—not that the Association wishes "to imply by this that the study of geometry ought to be preceded by a study of the logical independence of associated theorems." The opinion of the compilers is "that at first all the steps by which any theorem is demonstrated should be carefully gone through by the student, rather than that its truth should be inferred from the logical rules here laid down. At the same time they strongly recommend an early application of general logical principles." The President, in one of his addresses, states that the object of this introduction is "to guide the teacher immediately, and the student ultimately." It contains certain general axioms (as the whole is greater than its part), and taking as its typical theorem, if *A* is *B*

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then *C* is *D*, it explains what is meant by its *contrapositive* (if *C* is not *D*, *A* is not *B*), by its *converse* (if *C* is *D*, *A* is *B*), and by its *obverse* (if *A* is not *B*, *C* is not *D*). This last term we have heard strongly condemned; it was substituted (see Fifth Annual Report) for the more usual term *opposite* on the ground that, in logic, two opposite propositions cannot be true together. The terminology, however, to our mind, is a matter of no great consequence. For proving converse theorems frequent use is recommended in the work of a "Rule of Identity" here given, *i.e.* if there is but one *A* and but one *B*, then if *A* is *B*, it necessarily follows that *B* is *A*. (De Morgan's illustration is given in Wilson's Geometry.)

The *Straight Line* is the subject of Book i., and takes up five sections, Angles at a point, Triangles, Parallels and Parallelograms, Problems, and Loci. Here, in the definitions, we have two difficulties to meet, What is a *straight line?* what is an *angle?* The former is defined to be "such that any part will, however placed, lie wholly on any other part if its extremities are made to fall on that other part." The latter is stated to be a "simple concept incapable of definition;" its nature, however, is explained and illustrated in some detail. Parallel straight lines are defined as in Euclid, and Playfair's axiom is Axiom 5. Theorem 21 (Euc. i. 27) is proved as the contrapositive of Theorem 9 (Euc. i. 16); Theorem 22 (Euc. i. 29) by Rule of Identity, using Axiom 5. Book ii. treats of *Equality of Areas* (Theorems, Problems); Book iii. is on the *Circle*. Here a novelty is the treatment of Tangents in two sections, directly, then by the method of limits. Some, if not all, of De Morgan's suggestions ("Companion to British Almanac, 1849) on this subject have been adopted here. The Syllabus so far is not a novelty to many of our readers. Those possessed of Mr. Wilson's "Elementary Geometry" (3rd edition) will know that he has in the main, if not altogether, adopted the lines laid down in the Association's work, adding proofs in full, and much interesting illustrative matter. It hardly needs our saying that the method of superposition is freely used, and that alternative constructions are indicated.

We come now to Books iv. and v., which cover pretty much the same ground, except that in the former book we have the subject of proportion and its application treated in a thoroughly rigorous method, which is a simplification of Euclid's mode of treatment by multiples. In the latter book the same subjects are treated in a confessedly incomplete manner (for commensurables only) for the use of students whose capacities or time may be limited.

Similar figures, areas, loci, and problems complete Book v.

We shall conclude our notice by taking a few extracts from the report made by the committee appointed by the British Association "to consider the possibility of improving the methods of instruction in elementary geometry."

"It seems advisable that the requisite uniformity should be obtained by the publication of an authorised syllabus, indicating the order of the propositions, and in some cases the general character of the demonstrations, but leaving the choice of the text-book perfectly free to the teacher. . . . The committee recommend that the teaching of practical geometry should precede that of theoretical geometry, in order that the mind of the learner may first be familiarised with the facts of the science, and afterwards led to see their connection. With this end the instruction in practical geometry should be directed as much to the verification of the theorems as to the solution of problems. . . . It appears that the principle of superposition might advantageously be employed with greater frequency in the demonstrations, and that an explicit recognition of it as an axiom of fundamental assumption should be made at the commencement. . . . The committee think also that it would be advisable to introduce explicitly certain definitions and principles of general logic, in order that the processes of simple conversion may not be confounded with geometrical methods."

The Syllabus now published is under the consideration of this body of distinguished mathematicians, who will report upon its merits and discuss the advisability of giving it the authority of the British Association. In the mean time it will be of considerable service if teachers will practically test it for themselves, and make known their views of its adaptation or want of adaptation for the end proposed. We may remark that Def. 38 (when a straight line intersects two other straight lines, it makes with them eight angles, which have received special names in relation to one another) is not quite correct, for the three lines may cointersect, and then six angles only are formed. Introduce the words "in two distinct points" between "straight lines," and "it makes."

ESKIMO TALES AND TRADITIONS

Tales and Traditions of the Eskimo, with a sketch of their Habits, Religion, Language, and other Peculiarities. By Dr. Henry Rink. Translated from the Danish by the Author. Edited by Dr. Robert Brown. With numerous Illustrations drawn and engraved by Eskimo. (Edinburgh and London: Blackwood and Sons, 1875.)

DR. Rink is probably the greatest living authority on all matters connected with the Greenland Eskimo. The high value of his contributions to our knowledge of Greenland and its people is universally admitted. The English reading public, and English ethnologists especially, will no doubt be grateful to him for having put his "Eskimo Tales and Traditions" into an English dress. The translation is perfectly idiomatic and altogether creditable to the author.

Not the least valuable portion of the work is the introduction, treating of the Eskimo themselves, in which, in a few short chapters, Dr. Rink presents a succinct and clear statement of all that is at present known of these interesting people. For his present purpose Dr. Rink divides the Eskimo into seven groups, groups which, we think, have quite marked enough distinctions to be regarded as convenient for most other purposes; they are as follows:—1. The East Greenlanders; 2. The West Greenlanders; 3. The Northernmost Greenlanders or Arctic Highlanders of Sir John Ross; 4. The Labrador Eskimo; 5. The Eskimo of the Middle Regions, from Baffin and Hudson Bays to Barter Island, near the Mackenzie River; 6. The Western Eskimo, from Barter Island to the west and south; and 7. The Asiatic Eskimo.

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